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MANAGEMENT OF THUMB SUCKING HABIT: A CASE REPORT

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Abstract

Digit sucking is a natural phenomenon and is one of the most common learned patterns of behavior seen in children of preschool age. If digit sucking habit persists beyond the time permanent teeth begin to erupt, it may cause malocclusion. When the thumb is inserted into mouth mandible is positioned downward. The digit creates pressure on incisors blocking their effective eruption while allowing excessive eruption of the posterior teeth. The upper incisors are proclined and the lower incisors are retroclined. Starting from counseling to appliance therapy, sample treatment modalities have been reported in the literature. This case report describes a 5-year-old girl who reported to our department with a history of thumb sucking habit which was intervened with the use of fixed habit breaking appliance. **Keywords:** Habit breaking appliance, Thumb sucking, Proclined and Retroclined teeth.

Introduction

Habit is defined as a fixed practice produced by a constant repetition of an act^{1,2}. One of the most common repetitive behaviors in the infantile period is digit sucking. Digit sucking is characterized by the placement of one or more digits to varying depths in the mouth. The digit creates pressure on incisors blocking their effective eruption while allowing excessive eruption of the posterior teeth. The upper incisors are proclined and the lower incisors are retroclined^{3,4}. This habit is considered to be normal up to the age of 3-4 years^{5,6}. According to Oslen⁷, the most common oral habit was thumb sucking or finger sucking with a reported incidence ranging from 13% to almost 100% at some time during infancy^{8,9}. The habit may develop early in life and continue from infancy through primary, mixed and permanent dentition. If the habit continues into the mixed dentition, a malocclusion may develop. The adverse effect of digit-sucking habit can be seen in the form of proclined and flared maxillary and/or mandibular incisors, development of anterior open bite, and Class II malocclusion^{10,11}. Thumb sucking is of two types:

Active: In this type, there is a heavy force by the muscles during the sucking and if this habit continues for a long period, the position of permanent teeth and the **shape of mandible** will be affected.

Passive: In this type, the child puts his/her finger in mouth, but because there is no force on teeth and mandible and hence this habit is not associated with skeletal changes^{12,13}.

Case Report

A 5 year-old girl reported to the Department of Pedodontics and Preventive Dentistry, KDC Meerut, with a chief complaint of thumb sucking habit since the child was 8 months old. On examination, the child was in primary dentition stage and was free of any carious lesion and no skeletal abnormality was detected because of the habit. On extra oral examination, right hand thumb finger showed callus formation (Figure 1). All the other methods of habit cessation attempted had failed in this patient. Thus a fixed habit breaking appliance palatal crib soldered with bands was planned. Accordingly the second primary molars were banded, and impression was made. The appliance was fabricated on the cast using a 0.045 stainless steel wire and soldered on to the bands. In the second appointment, the appliance was cemented using glass ionomer cement luting cement (figure 2). After 2 weeks the patient was recalled for a check-up, her parents gave a positive feedback about the regression of the habit. There was observable changes on the thumb after 2 months and showed a marked reduction in the habit and the callus formation on the thumb had

resolved completely (figure 3). Patient was advised to wear appliance for at least 5-6 months to avoid relapse of the habit. The child was able to discontinue the sucking habit and showed no relapse or return to the habit during the 6 months of post-treatment follow-up period.

Discussion

Placement of thumb or one or more fingers in various depths into the oral cavity¹⁴. Dentists always face a challenge to decide whether to treat a child with thumb sucking or not. In a child >4 years of age who has a chronic habit and the child requests an aid to stop the habit, as dentist a decision must be made by us whether to treat the patient with an dental appliance or not. Before considering the placement of intra-oral appliance, easier and less expensive treatment methods like reminder therapy and use of reward system should be considered, even then if the child fails to overcome the habit then a intra-oral appliance can be planned¹⁵. There are various habit breaking oral appliance that are used as reminders to the child to break the habit. A fixed appliance is always preferred to a removable appliance due to its higher compliance. Appliance is custom fabricated after placing bands on either the first permanent molars or primary second molars and making an impression. Fabricated appliance is then cemented and kept in the mouth 5-6 months after the habit is broken. Following oral appliances are successfully used to treat digit sucking habit^{14,16}:

1. Reminder therapy:-

- ✓ **Intraoral approaches:** Removable appliances with palatal cribs
- ✓ **Extraoral approaches:** Ace Bandage and use of long night sleeve gown

2. Mechanotherapy:-

- Palatal crib appliance
- Hay rake appliance
- Bluegrass appliance by Haskell and Mink
- Quad Helix

3. Psychological therapy:- Behavior shaping and modification

Palatal crib with or without “spurs” is suggested as the habit breaking appliance of choice for digital sucking. The crib consists of a wire soldered on to the bands placed on either the maxillary second deciduous molars or the first permanent molars¹⁷.

Conclusion

Non-nutritive Sucking Habits may be considered normal till certain stage of the child's development and it may or may not be related to the emotional status of the child. If the habit is causing a malocclusion or other pathologic process, it is responsibility of the dentist to work with the child and parents toward a resolution of the problem. The fixed palatal crib appliance is an effective treatment option in cessation of thumb sucking habit and It successfully intercepts the thumb-sucking habit within a short period of time.

Figures:



Figure 1: Preoperative view with callus formation



Figure 2: Intraoral view of the appliance



Figure 3: Marked reduction in Callus formation



Figure 4 : Post operative view

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